

Data and signal line chokes

Common-mode choke for high speed bus interface, EIA 1210

Series/Type: **ADF32T-4R7**
Date: September 2022

Rated voltage 42 V AC / 80 V DC

Rated inductance 2 x 4.7 μ H

Construction

- Ferrite I-core, ferrite shielding
- Winding: enamel copper wire
- Winding welded to terminals



Features

- Temperature range up to +125 °C
- Suitable for lead-free reflow soldering as referenced in JEDEC J-STD 020E
- Qualified according to AEC-Q200
- RoHS-compatible

Applications

- Automotive electronics
- High speed bus interfaces

Terminals

One-sided tinned terminals

- Base material CuSn6
- Layer composition Ni, Sn
- Lead-free tinned

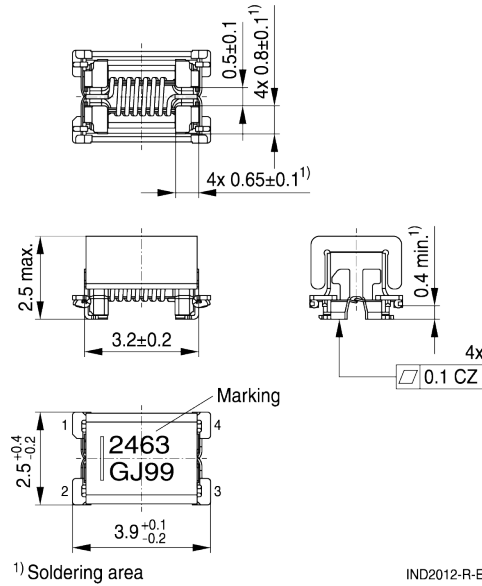
Marking

- Marking on component:
L value (in μ H, coded), date code, pin1 marking
- Minimum data on reel:
Lot number, part number, date of packing

Delivery mode and packing unit

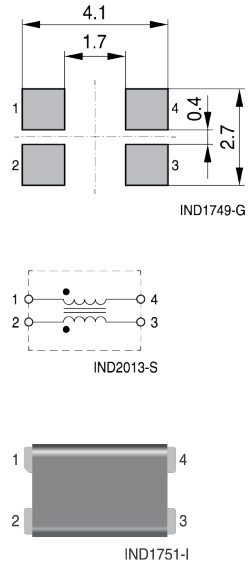
- 12-mm blister tape, wound on 330-mm \varnothing reel
- Packing unit: 6000 pcs./reel

Dimensional drawing



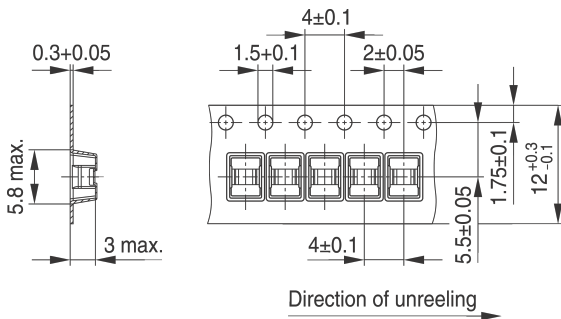
Dimensions in mm

Layout recommendation



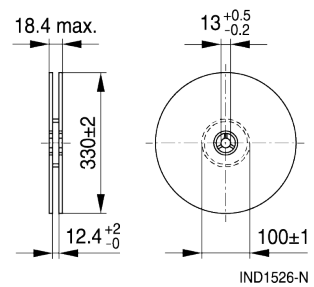
Taping and packaging

Blister tape



IND1752-J-E

Reel



Dimensions in mm

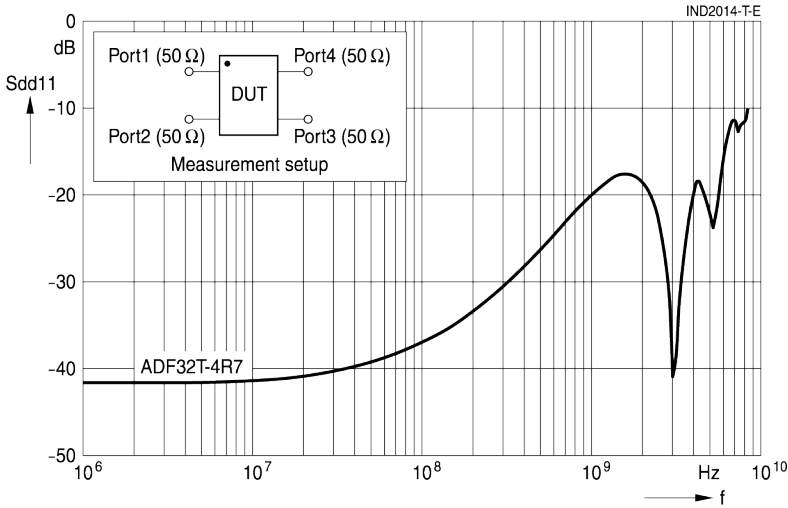
Technical data and measuring conditions

Rated inductance L_R	Measured with Keysight E4980A (or equivalent) at 100 kHz, 0.1 mA, +23 °C ±3 °C, inductance is specified per winding
Inductance tolerance	+30% / -50%
DC resistance R_{DC}	Measured at +23 °C ±3 °C, resistance is specified per winding
Insulation resistance R_{iso}	Insulation resistance between both windings, measured at 50 V _{DC} , +23 °C ±3 °C
Rated current I_R	Maximum DC current that can continuously be applied to the component
Rated voltage V_R	Maximum DC voltage that can continuously be applied to the component
Weight	Approx. 0.08 g

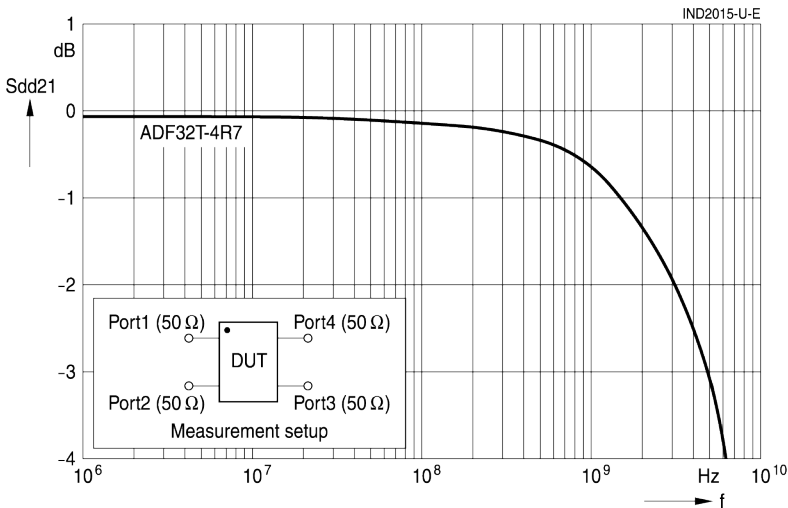
Characteristics and ordering codes

L_R μH	$R_{DC,max}$ Ω	$R_{iso,min}$ MΩ	$I_{R,max}$ mA	$V_{R,max}$ V	Internal code	Ordering code
4.7	0.62	10	100	80	B82782F2472N200	ADF32T-4R7

Return losses (typical curve)

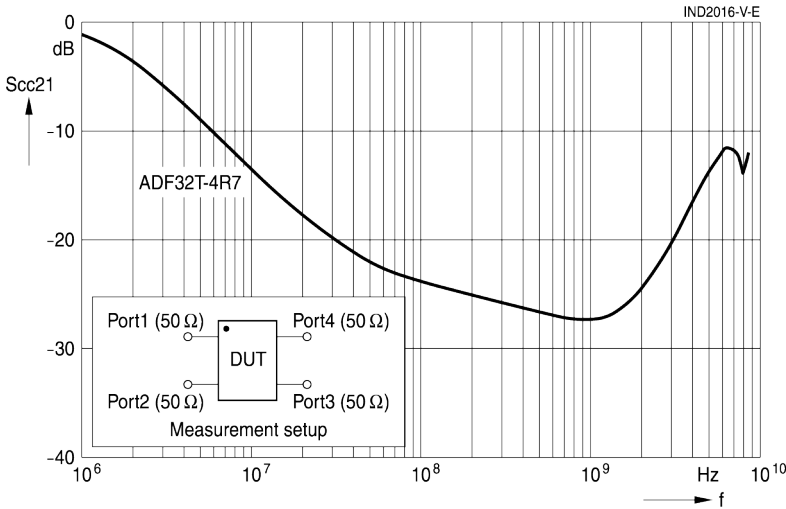


Insertion losses (typical curve)

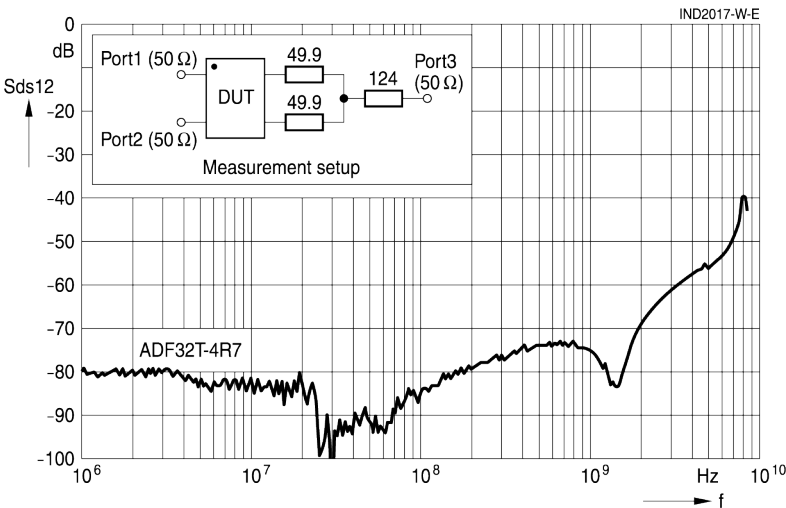


Note: S-parameters information is for reference only, shown data represents typical component performance.

Common Mode Rejection (typical curve)

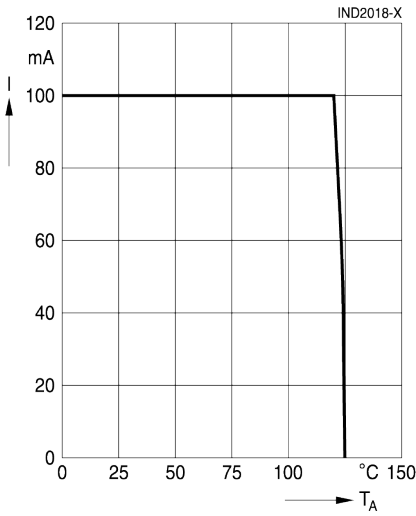


Mode Conversion (typical curve)



Note: S-parameters information is for reference only, shown data represents typical component performance.

Current derating versus ambient temperature



Cautions and warnings

- Please note the recommendations in our Inductors data book (latest edition) and in the data sheets.
 - Particular attention should be paid to the derating curves given there.
 - The soldering conditions should also be observed. Temperatures quoted in relation to wave soldering refer to the pin, not the housing.
- If the components are to be washed varnished it is necessary to check whether the washing varnish agent that is used has a negative effect on the wire insulation, any plastics that are used, or on glued joints. In particular, it is possible for washing varnish agent residues to have a negative effect in the long-term on wire insulation. Washing processes may damage the product due to the possible static or cyclic mechanical loads (e.g. ultrasonic cleaning). They may cause cracks to develop on the product and its parts, which might lead to reduced reliability or lifetime.
- The following points must be observed if the components are potted in customer applications:
 - Many potting materials shrink as they harden. They therefore exert a pressure on the plastic housing or core. This pressure can have a deleterious effect on electrical properties, and in extreme cases can damage the core or plastic housing mechanically.
 - It is necessary to check whether the potting material used attacks or destroys the wire, wire insulation, plastics or glue.
 - The effect of the potting material can change the high-frequency behaviour of the components.
 - Many coating materials have a negative effect (chemically and mechanically) on the winding wires, insulation materials and connecting points. Customers are always obligated to determine whether and to what extent their coating materials influence the component. Customers are responsible and bear all risk for the use of the coating material. TDK Electronics does not assume any liability for failures of our components that are caused by the coating material.
- Ceramics / ferrites are sensitive to direct impact. This can cause the core material to flake, or lead to breakage of the core.
- Even for customer-specific products, conclusive validation of the component in the circuit can only be carried out by the customer.
- Due to product design and applied manufacturing process, appearance, symmetry, and shape of not dimensioned details could vary within same lot, as well discoloration of housing is possible. TDK does not expect detrimental effects on product function or reliability. In case of conflicts, TDK reference standard shall prevail.

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2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
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Important notes

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